



2010 13th ANNUAL SKILLS MANITOBA COMPETITION CONTEST SCOPE

CONTEST NAME: Welding

CONTEST NO: 10

LEVEL:

Secondary

Post Secondary

CONTEST LOCATION: Red River College – Notre Dame Campus

NOTE:

Secondary level: Maximum 2 competitors per school.

Post-Secondary level: Maximum 2 competitors per school

CONTEST START TIME AND DURATION:

4 hours

PURPOSE OF CHALLENGE:

Assess the competitor's ability in the field of welding. Competitors must demonstrate their ability to read plans and interpret welding symbols and demonstrate their mastery of the main welding procedures used in the industry.

SKILLS AND KNOWLEDGE TO BE TESTED:

Based on technical drawings and welding procedures, contestants will be assessed on the assembly and welding of various projects in all positions.

Practical

Secondary

- Shielded metal arc welding (SMAW).
- Gas metal arc welding (GMAW).

Post-secondary

- Shielded metal arc welding (SMAW).
- Gas metal arc welding (GMAW).
- Gas tungsten arc welding (GTAW).

Theory

The theory portion of the contest is limited to the knowledge required to complete practical work. These knowledge requirements are included in the contest for assessment purposes and involve the following aspects:

reading plans;

interpreting welding symbols;

Arc welding ;

MIG welding;

TIG welding;

knowledge of basic and auxiliary metals;

welding machines;

safety regulations.

Note

All measurements are shown in Standard

Secondary

Mild steel structure (SMAW and GMAW)

Post-secondary

Mild steel structure (SMAW, GMAW, and GTAW)

Stainless steel/Aluminum structures (GTAW)

Tasks

Secondary

SMAW - 1G/2G/3G pipe or plate

Root: E6010/6011 - 1/8" electrode

Fill and cap: E6010/6011 or E7018 - 1/8" electrode

Fillets: 2F and 3F - E7018 - 3/32 or 1/8" electrode

GMAW - 1G pipe or plate, 1F,2F,3F & 5F (vert. up/down)

Basic Materials- Secondary

Low-grade carbon steel

Thicknesses :

Plates : 6.4 to 9.5mm (1/8" to 3/8")

Pipes : 4.8mm (3/16")

Diameters : 50 to 100mm (2" to 4")

Auxiliary Materials

SMAW= E48018 (E7018) 2.4 and 3.2 (3/32" and 1/8")

E41010 (E6010) 2.4 and 3.2 (3/32" and 1/8")

GMAW= ER480S-6 (ER70S-6) 0.9mm (.035)

Post-Secondary

SMAW - 1G, 2G, 3G pipe or plate

Root: E6010/6011 - 1/8" electrode

Fill and cap: E6010/6011 or E7018 - 1/8" electrode

Fillets: 2F, 3F, 4F, - E7018 - 3/32" and 1/8" electrode

GMAW - 1G pipe or plate, 2F,3F & 5F (vert. up and down), 1G

GTAW - 1G, 2F

Welding on Stainless steel/aluminum structures

GTAW - 2F

Post-secondary – basis materials

Low-grade carbon steel

Thicknesses :

Plates : 6.4 to 9.5mm (1/4" to 3/8")

Pipes : 4.8mm (3/16")

Diameters : 50 to 100mm (2" to 4")

Stainless Steel 308L

Thickness : 1/16 " to 1/8"

Aluminum 5356

Thickness : 14g - 10 gauge

SMAW= E48018 (E7018) 2.4 and 3.2 (3/32" and 1/8")

E41010 (E6010) 2.4 and 3.2 (3/32" and 1/8")

GMAW= ER480S-6 (ER70S-6) 0.9mm (.035)

GTAW= R480S-3 (R70S-3) 1.6 and 2.4 (1/16" and 3/32")

ER308L or ER316L (1/16" and 3/32")

5356 (3/32")

Pre-requisites

Contestants must have mastered the main manual welding and cutting procedures used in industry as acquired in their training, as well as extensive knowledge of reading plans and the ability to interpret welding symbols. **All contestants must be entered in or have completed an approved welding course.**

POINT BREAKDOWN (100 POINTS)

Secondary

Project 1 - 100%

Post-Secondary

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Project 1 - 75%
Project 2 - 25%

EQUIPMENT, TOOLS, SUPPLIES AND CLOTHING:

Clothing (to be provided by the contestant):

- work clothes;
- CSA-approved steel-toed boots;
- leather coat;
- welding gloves (2 categories = for TIG and for MIG);
- safety goggles;
- ear plugs or protectors;
- helmet, #10 and/or #11 and/or #12 lens.

Note

Contestants who do not have the required protective gear will not be allowed to participate in the contest.

Safety glasses and steel toed boots must be worn at **ALL** times.

Provided by the organizing committee

- Welding machines and accessories
- Instructions and welding plans and procedures
- All basic materials required to complete projects
- Set of practice materials
- All auxiliary materials

Provided by the contestant (tool box)

- Protective (security) gear listed on the previous page
- Measuring tape (standard)
- Soap stone (chalk)
- Lead pencil, felt or other markers.
- Centre punch
- Cold chisel
- 12" square - combination
- Fillet weld gauge
- Chipping hammer
- Steel wire brush
- Needle point compass
- 16 ounce ball peen hammer
- adjustable wrench
- All-purpose pliers (for MIG)
- Vice grips

Other personal hand tools approved by the jury committee.

**JUDGES SHALL BE FROM INDUSTRY AND EDUCATIONAL INSTITUTIONS;
HOWEVER, THEY CANNOT HAVE ONE OF THEIR STUDENTS IN THE CONTEST.
JUDGES DECISIONS ARE FINAL**

ADDITIONAL INFORMATION WILL BE GIVEN DURING CONTEST ORIENTATION

CONTEST DRAWINGS (isometric only) WILL BE AVAILABLE FROM SKILLS
MANITOBA AFTER FEB 20, 2010.

ADVISORS, INSTRUCTORS, ETC., ARE NOT PERMITTED TO TALK TO THEIR
CONTESTANTS DURING THE COMPETITIONS.

**FOR MORE INFORMATION PLEASE CONTACT TECHNICAL COMMITTEE
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